

CLAIMS

1. A method for the production of fractionally homogeneous compositions containing microcrystalline cellulose (MCC), comprising the steps:
 - (a) hydrolyzing cellulose-containing raw material with a catalytic system comprising at least one acidic catalyst in the presence of at least one process additive at about 0.1 to 10 catalytic system/cellulose weight ratio;
 - (b) neutralizing said acid with one or more precipitator in the manner that fine particles of insoluble ingredients precipitate into a slurry containing MCC;
 - (c) admixing at least one modifier; and
 - (d) homogenizing of the composition so that a MCC product characterized by a uniformly dispersed micro-particle cellulose material and various functional ingredients is obtained.
2. The method according to claim 1, wherein the acidic catalyst is a mineral acid.
3. The method according to claim 1, wherein the process additive is selected from acidic stable non-ionic wetting agent, oxidant or any mixture thereof.
4. The method according to claim 3, wherein the non-ionic wetting agent is a polyalkylenoxide polysiloxane or any of its derivatives thereof.
5. The method according to claim 3, wherein the concentration of the non-ionic wetting agent is in the range of about 0.02 to 0.20% (weight percent).
6. The method according to claim 3, wherein the concentration of the non-ionic wetting agent is in the range of about 0.05 to 0.10% (weight percent).
7. The method according to claim 3, wherein the oxidant is selected from potassium permanganate, hydrogen peroxide, sodium and/or potassium peroxides or any peroxide-containing mixture.

8. The method according to claim 3, wherein the concentration of oxidant is in the range of about 0.5 to 5.0% (weight percent).
9. The method according to claim 3, wherein the concentration of oxidant is in the range of about 1.0 to 5.0% (weight percent).
10. The method according to claim 1, wherein the catalytic system comprising the acidic catalyst and process additive to cellulose weight ratio is in the range of about 0.5 to 5.0.
11. The method according to claim 1, wherein the catalytic system comprising the acidic catalyst and process additive to cellulose weight ratio is in the range of about 2.5 to 3.5.
12. The method according to claim 1, wherein the precipitator is selected from low-soluble carbonates, hydroxides and oxides, soluble basic silicates, salts of carbonic and fatty acids or any mixture thereof.
13. The method according to claim 12, wherein the salts of fatty acids are based on stearic acid, palmitic acid, oleic acid or any mixture thereof.
14. The method according to claim 12, wherein the precipitator also comprising one or more of the specific constituents that are characteristic of fillers, pigments, anti-blocking agents; lubricants; rheology adjusters or any mixture thereof.
15. The method according to claim 12, wherein the low-soluble precipitators comprise cations of calcium, barium or a combination thereof.
16. The method according to claim 1, wherein the precipitator is admixed to the acidic MCC-slurry so that a neutral pH of about 6 to 8 is obtained.

17. The method according to claim 1, wherein the modifier is selected from thickeners, dispersers, emulsifiers, anti-foaming agents, preservatives, biocides, pigments or any mixture thereof.
18. The method according to claim 1, wherein thickeners and/or dispersers are admixed such that a about 5 to 20% (weight percent) mixture is obtained.
19. The method according to claim 1, wherein thickeners and/or dispersers are admixed such that about 8 to 10% (weight percent) mixture is obtained.
20. The method according to claim 1, wherein preservatives and/or biocides are admixed such that about 0.1 to 2.0% (weight percent) mixture is obtained.
21. The method according to claim 1, wherein preservatives and/or biocides are admixed such that about 0.5 to 1.0% (weight percent) mixture is obtained.
22. The method according to claim 1, wherein the MCC product comprising solid content of about 1 to 50%.
23. The method according to claim 1, wherein the MCC product comprising solid content of about 10 to 30%.
24. The method according to claim 1, additionally comprising the step of spray-drying the uniformly dispersed micro-particle cellulose materials.
25. An MCC product characterized by uniformly dispersed micro-particle cellulose produced by a method comprising the following steps:
 - (a) hydrolyzing cellulose-containing raw material with a catalytic system comprising at least one acidic catalyst in the presence of at least one process additive at about 0.1 to 10 catalytic system/cellulose weight ratio;
 - (b) neutralizing said acid with one or more precipitator in the manner that fine particles of insoluble ingredients participates into a MCC containing slurry;

- (c) admixing at least one modifier; and
- (d) homogenizing of the composition so, that an obtained MCC product are characterizing with micron- or submicron-scale particles; uniform fractional composition having heterogeneity H-parameter of about 1 to 1.3, developed external specific surface more 1000 m²/kg and high crystallinity of the solid phase, of about 85 to 90%.